6. TRANSPORTATION

Design of a multimodal transportation system has been one of the primary purposes of the Framework Plan process. Despite its location between the region's two major north-south freeways, road connections in and out of the NCFUA are few, and existing congestion in surrounding communities limits the intensity of development in the NCFUA.

Two transportation objectives have strongly influenced the design of the Framework Plan. First is the need to limit traffic impacts in adjoining neighborhoods. Second is the need to accommodate densities and land use patterns that will support transit use and promote walking and bicycle use. These two objectives sometimes conflict, because on a per-acre basis, the densities needed to support transit use generate more auto trips than do lower densities, even though a higher proportion of trips use alternatives to driving. The Framework Plan addresses the potential conflict by concentrating densities in two major and one lesser concentration (in Subareas IB, III and IV, respectively), all of which are accessible by designated transit preferential streets. Outside of these concentrations, development densities are low and resulting traffic impacts will be minimal.

6.1 GUIDING PRINCIPLES: TRANSPORTATION

6.1a Design and construct the NCFUA transportation system so that it will not result in severe impacts to adjoining communities. Development in the NCFUA will add trips to streets in surrounding communities. The Framework Plan has been designed to keep impacts to an acceptable level.

6.1b The circulation system shall be designed to meet regional transportation needs by providing major links between existing and planned roads in surrounding communities and jurisdictions.

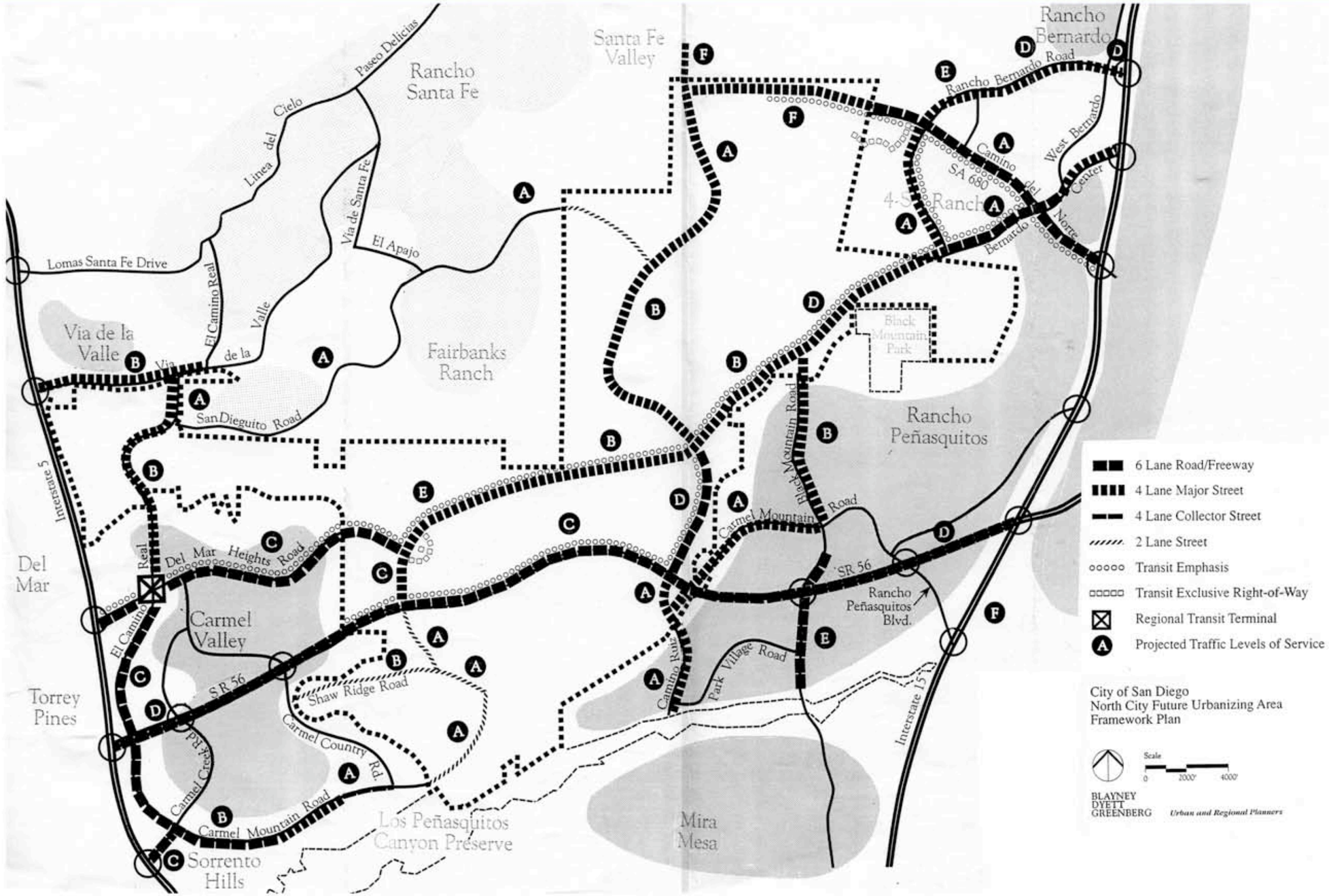
6.1c Create a land use and circulation pattern that supports multimodal travel habits for people living and working in the NCFUA. Give preference to transit on congested road segments.

6.1d Control the impact of roads on environmental tier lands by minimizing the number of road crossings of open space and requiring bridge structures to be built in order to allow continuous areas for movement of flora and fauna (see open space principles in **Section 5.5**).

6.2 IMPLEMENTING PRINCIPLES: ROAD ALIGNMENTS

6.2a The Framework Plan diagram shows generalized road alignments for major roadways.

6.2b Road alignments shown on the Framework Plan diagram will be refined based on subsequent studies. Limitations on the extent to which road alignments are permitted to deviate from the Framework Plan diagram are as follows:



Circulation System and Projected Traffic Levels of Service **6-1**

North City Future Urbanizing Area Framework Plan FIGURE

- Arterial streets shall border mixed-use community core areas, not dissect them so that the cores can be served by a secondary, pedestrian-oriented street system.
- All road segments must continue to serve the same development areas and land uses as are shown on the diagram.
- The relationship among NCFUA road network segments may not be changed.
- Because of the anticipated environmental impact of freeway interchange construction, and Caltrans interchange spacing requirements, the number of interchanges on SR-56 within the NCFUA shall remain at two. Their precise locations are to be determined by subsequent studies.

6.2c Alignments should seek to minimize the need for earthwork and should minimize habitat impacts. Intersections and interchanges should be located outside of the environmental tier whenever possible.

6.2d Road crossings of the environmental tier are to be limited to the roads shown on the Framework Plan diagram and collector streets essential for area circulation. Local streets should not cross the environmental tier, except in areas shown as Urban/Natural amenities in **Figure 5-1**, which may be crossed if necessary.

6.3 IMPLEMENTING PRINCIPLES: STREET OPERATIONS AND CLASSIFICATIONS

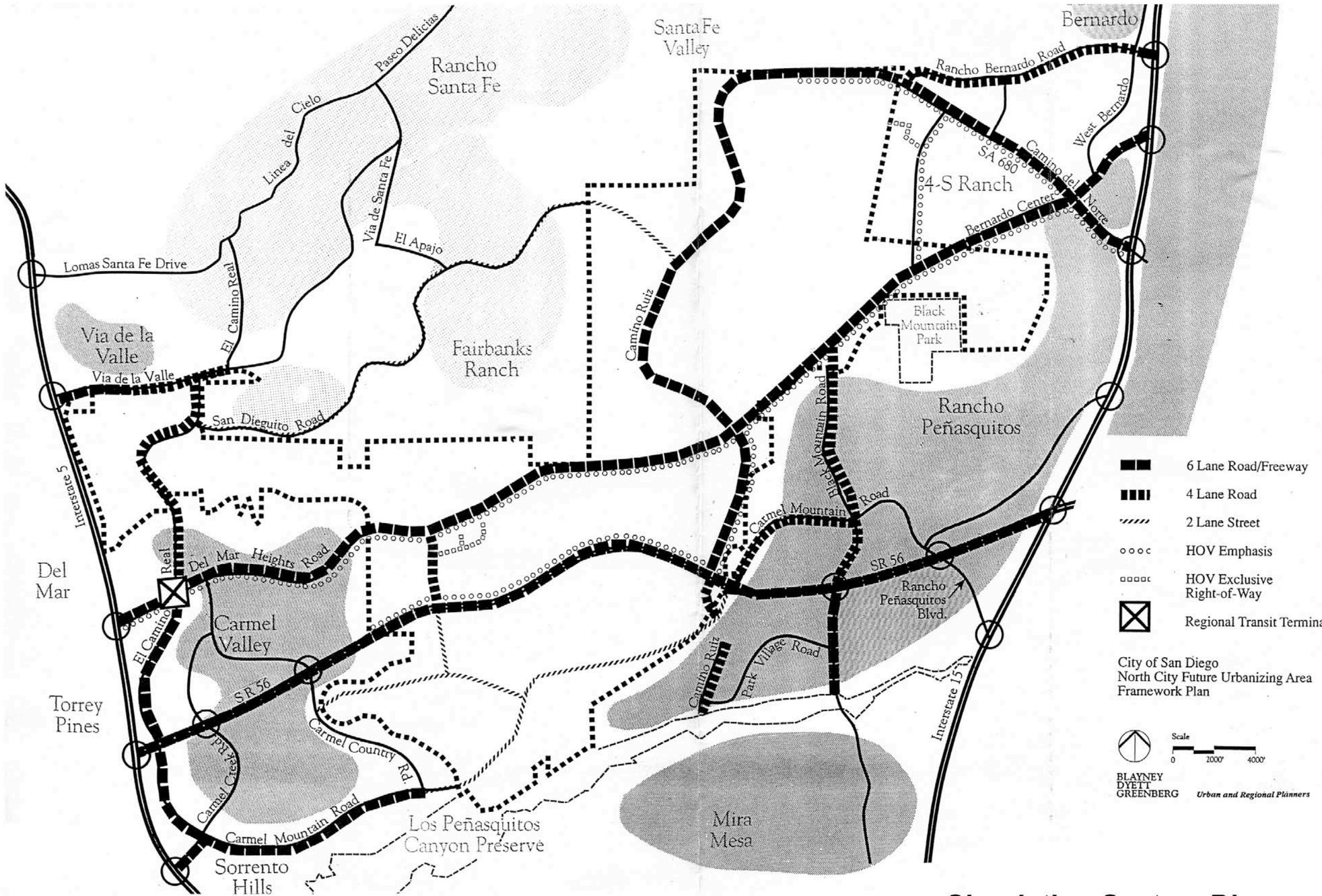
6.3a **Table 6.3-A** and **Figure 6-1** indicate projected operations on roads in and around the NCFUA, expressed using level of service (LOS), a measure that uses letter designations A through F to describe peak hour traffic flow, with A representing free-flow operations and F representing highly congested conditions. Projected traffic volumes, shown in **Figure 6-2**, are the basis for determining level of service and roadway requirements. Lane requirements are depicted in **Figure 6-2**.

6.3b In determining trip generation, reduced trip generation rates should be used for mixed-use projects incorporating innovative transit and pedestrian-oriented design features.

6.3c Hotel and resort facilities associated with commercial recreational uses are permitted in residential areas consistent with **Table 3.1-B** only if subarea transportation analysis demonstrates, based on cumulative analysis, that they can be accommodated without changing projected level of service and roadway requirements as shown in **Table 6.3-A**.

6.3d On-street parking should not be provided on major streets.

6.3e Where possible, street widths should be limited to four lanes.



Circulation System Diagram **6-2 FIGURE**

North City Future Urbanizing Area Framework Plan

TABLE 6.3-A
PROJECTED LEVELS OF SERVICE
AND ROADWAY REQUIREMENTS

Roadway Segment	Limits	Street Type	LOS*
Del Mar Heights Road	I-5 to westerly NCFUA Boundary	6-Lane Primary Arterial	C
	Westerly NCFUA Boundary to Camino Santa Fe	6-Lane Major Arterial	A
	Camino Santa Fe to eastern limit of Mixed-Use Community Core	4-Lane Major Arterial	E
	Mixed-Use Community Core to Camino Ruiz	4-Lane Major Arterial	B
	Camino Ruiz to Black Mountain Road	4-Lane Major Arterial	B
	Black Mountain Road to easterly NCFUA Boundary	4-Lane Major Arterial	D
El Camino Real	Carmel Mountain Road to Del Mar Heights Road	6-Lane Major Arterial	C
	Del Mar Heights Road to Via de la Valle	4-Lane Major Arterial	B
Carmel Mountain Road	I-5 to El Camino Real	6-Lane Primary Arterial	C
	El Camino Real to Neighborhood 8A north-south 2-Lane Collector	6-Lane Major Arterial	B
	Neighborhood 8A north-south 2-Lane Collector to Carmel Country Road	4-Lane Collector	A
	Carmel Mountain Road to Shaw Ridge Road	2-Lane Collector	A
Black Mountain Road	Del Mar Heights Road to Twin Trails Drive	4-Lane Major Arterial	B
	Twin Trails Drive to Mira Mesa Community	6-Lane Primary Arterial	E
San Dieguito Road	El Camino Real to El Apajo	2-Lane Collector	A*
	El Apajo to Camino Ruiz	2-Lane Collector	A
Camino Ruiz	Carmel Mountain Road to southern terminus	4-Lane Major Arterial	A
	Carmel Mountain Road to SR-56	4-Lane Major Arterial	A
	SR-56 to Del Mar Heights Road	6-Lane Major Arterial	D
	Del Mar Heights Road to San Dieguito Road	4-Lane Major Arterial	B
	San Dieguito Road to Camino del Norte	4-Lane Major Arterial	A
	North of Camino del Norte	4-Lane Primary Arterial	F*
Via de la Valle	I-5 to San Andres Drive	6-Lane Major Arterial	B
	San Andres Drive to El Camino Real	4-Lane Major Arterial	B
Camino del Norte (SA-680)	I-5 to County limits	6-Lane Expressway	A
	County limits to Camino Ruiz	4-Lane Major Arterial	D
Bernardo Center Road	NCFUA to West Bernardo Drive	6-Lane Major Arterial	A
Rancho Bernardo Road	Camino del Norte to Via del Campo	4-Lane Major Arterial	E
	Via del Campo to West Bernardo Drive	4-Lane Major Arterial	D
	West Bernardo Drive to I-15	6-Lane Major Arterial	D

TABLE 6.3-A
PROJECTED LEVELS OF SERVICE
AND ROADWAY REQUIREMENTS (continued)

Roadway Segment	Limits	Street Type	LOS*
Camino Santa Fe	Del Mar Heights Road to SR-56	4-Lane Major Arterial	C
	SR-56 to east-west collector Street	2-Lane Collector	A
New east-west street (Shaw Ridge Road)	Carmel Mountain Road to Camino Santa Fe	2-Lane Collector	B
	Camino Santa Fe to westerly terminus	2-Lane Collector	A
New north-south street (Shaw Ridge Road)	Del Mar Heights Road to Camino del Norte	4-Lane Major Arterial	A
Interstate 5	South of Carmel Mountain Road	16-Lane freeway	F
	North of Via de la Valle	10-Lane Freeway w/aux	F
Interstate 15	South of SR-56	8-Lane freeway w/2 HOV	F
	North of Rancho Bernardo Road	8-Lane freeway w/2 HOV	E
State Route 56	East of El Camino Real	6-Lane Freeway w/aux	D
	West of Camino Ruiz	6-Lane Freeway w/aux	C
	West of I-15	6-Lane Freeway	D

* See **Figure 6-2** for Level of Service Definitions
Source: City of San Diego Engineering and Development Department

TABLE 6.3-B
AVERAGE DAILY TRAFFIC AND LOS (1991 AND BUILDOUT WITHOUT NCFUA)

Roadway Segment	Limits	Ultimate Classification	1991 ADT	Buildout w/o NCFUA	V/C	LOS*
Del Mar Heights Road	I-5 to FUA Boundary	6-Lane Primary Arterial	32,000	41,000	0.66	B
El Camino Real	Carmel Mountain Road to Del Mar Heights	6-Lane Major Arterial	7,000	14,000	0.28	A
	Del Mar Heights to Via de la Valle	4-Lane Major Arterial	12,000	15,000	0.40	A
Carmel Mountain Road	I-5 to El Camino Real	6-Lane Primary Arterial	2,000	43,000	0.69	B
	El Camino Real to FUA	6-Lane Major Arterial	6,000	16,000	0.32	A
	FUA to Paseo Montalban	4-Lane Major Arterial	16,000	7,000	0.19	A
Black Mountain Road	FUA to Twin Trails Drive	4-Lane Major Arterial	17,000	22,000	0.59	A
	Twin Trails Drive to Rancho Peñasquitos	6-Lane Primary Arterial	17,000	49,000	0.78	C
Camino Ruiz	FUA to Rancho Peñasquitos	4-Lane Major Arterial	23,000	18,000	0.48	A
Via de la Valle	I-5 to San Andres	6-Lane Major Arterial	33,000	27,000	0.54	A
	San Andres to El Camino Real	4-Lane Major Arterial	21,000	19,000	0.51	A
Camino del Norte	I-5 to County limits	6-Lane Expressway	14,000	4,000	0.50	A
Bernardo Center Road	Camino del Norte to West Bernardo	4-Lane Major Arterial	9,000	17,000	0.45	A
	West Bernardo to I-15	6-Lane Major Arterial	33,000	30,000	0.60	A
Interstate 5	South of Carmel Mountain Road	16-Lane Freeway	221,000	398,000	1.32	F
	North of Via de la Valle	10-Lane Freeway w/aux	221,000	260,000	1.11	F
Interstate 15	South of SR-56	8-Lane Freeway w/2 HOV	165,000	200,000	0.85	D
	North of Rancho Beranardo Road	8-Lane Freeway w/2 HOV	146,000	202,000	0.86	D
State Route 56	East of El Camino Real	6-Lane Freeway w/aux	0	117,000	0.76	C
	West of Camino Ruiz	6-Lane Freeway w/aux	0	97,000	0.63	C
	West of I-15	6-Lane Freeway	25,000	80,000	0.67	C

ADT = Average Daily Traffic V/C = Volume-to-Capacity Ration LOS = Level of Service

*See **Figure 6-2** for Level of Service Definitions

Source: SANDAG

6.4 IMPLEMENTING PRINCIPLES: NON-MOTORIZED TRANSPORTATION

6.4a Subarea planning and design of development projects should emphasize facilities for pedestrians and bicycles that are safe, direct and attractive.

6.4b Mixed-use community cores and local mixed-use cores must be accessible to surrounding residential areas by foot and bicycle. Schools and parks must also have safe and direct pedestrian and bicycle access. Connections should be made to attractions and activity centers outside as well as inside the NCFUA.

6.4c All roads shown on the Framework Plan diagram must have sidewalks and bikeways on both sides of the street unless the relevant subarea plan includes a separate system of pedestrian and bike ways that offers equal or greater coverage and satisfies the other principles of this section.

6.4d When roads cross the environmental tier and topography permits, pedestrian and bicycle ways should be separated from the road in order to reduce the width of bridge structures and to provide pedestrians and bicyclists with a more appealing open space crossing.

6.4e Trail systems should be designed during subarea planning to link with adjacent communities and open space areas.

6.5 IMPLEMENTING PRINCIPLES: TRANSIT AND HIGH-OCCUPANCY VEHICLES

6.5a Create transit emphasis streets as shown on the Framework Plan diagram and circulation system diagram. The streets shown in **Figure 6-2** as "four-lane major streets with transit emphasis" shall be constructed as four lanes with right-of-way reserved for two additional lanes for possible future transit service. Funding for improvement of these two lanes shall be provided by development within the NCFUA. Transit vehicles should have signal pre-emption on arterial streets.

6.5b During the early phases of NCFUA development and construction, buses are expected to provide transit service. If levels of demand and available technology and financing make trolley service possible in the future, trolleys should provide direct service to NCFUA compact communities and, in particular, to the mixed-use community cores in Subareas IB and III.

6.5c Bus routes serving the NCFUA should be designed so that maximum frequency of service is provided in the mixed-use community cores, which should be the location of transit transfer stations. Transit stops and stations in the community cores should not have surface parking.

6.5d SR-56 is designated as a Transit/HOV emphasis facility. Transit on SR-56 is likely to have a more regional function than will transit on Del Mar Heights Road.

6.5e The Framework Plan diagram and circulation system diagrams show dedicated transit rights-of-way providing access into the center of the mixed-use community cores. The alignment of the right-of-ways may be altered during subarea planning; the intent is to provide fast and direct access into the cores, bypassing signalized intersections on major streets.

6.5f Transit service should be provided to high schools and other major community activity centers. High schools should be sited adjacent to planned transportation corridors.

6.5g The North City West Community Plan designates a regional transit terminal at El Camino/Del Mar Heights Road. The NCFUA transit service should connect with this and other links to the regional transit network.

6.5h Practical and convenient alternatives to the automobile shall be provided at the time of need through the provision of transit stops, buses, signage and other improvements.

6.5i Park-and -ide lots should be spaced at frequent (e.g., 1/2 mile) intervals in areas of low residential diversity. In denser areas, transit junctions should be placed within a normal walking distance and be served by peak period connectors to the express bus system.

6.5j Development of the compact communities shall be phased with the availability of peak period transit service including feeder bus or van service.